

What is Claimed is:

1 1. A method for the qualitative and/or quantitative detection of a ribosome
2 inactivating protein, comprising:

3 contacting a sample suspected of containing a ribosome inactivating protein
4 with an oligonucleotide substrate having a GA_xGA tetraloop wherein "A_x" is a nucleoside
5 comprising an adenine base, derivative or analog thereof; and

6 detecting the presence of the adenine base, derivative or analog thereof
7 released from "A_x" of said tetraloop as an indication of the presence of the ribosome
8 inactivating protein in the sample.

1 2. The method of claim 1, further comprising treating the adenine base,
2 derivative or analog thereof released from said tetraloop with a fluorescent reagent
3 compound for forming a fluorescent adenine derivative or analog base capable of emitting
4 fluorescence.

1 3. The method of Claim 2, wherein the fluorescent reagent compound is an
2 acetaldehyde.

1 4. The method of Claim 3, wherein the acetaldehyde is a haloacetaldehyde.

1 5. The method of Claim 4, wherein the haloacetaldehyde is selected from the
2 group consisting of bromoacetaldehyde and chloroacetaldehyde.

1 6. The method of claim 1 wherein the adenine base, derivative or analog thereof
2 is capable of emitting fluorescence when released from said tetraloop.

1 7. The method of claim 6 wherein the fluorescent adenine base, derivative or
2 analog base of "A_x" is 2-aminopurine.

1 8. The method of claim 1 wherein the oligonucleotide substrate comprises 2'-O-
2 methylated nucleosides.

1 9. The method of claim 8 wherein the 2'-O-methylated oligonucleotide substrate
2 is attached to a solid support.

1 10. The method of claim 8 wherein the GA_xGA tetraloop comprises
2 deoxyribonucleosides.

1 11. The method of claim 8 wherein the "A_x" of the GA_xGA tetraloop comprises a
2 deoxyribonucleoside.

1 12. The method of claim 9 wherein the solid support is Sepharose.

1 13. The method of claim 2 further comprising detecting the presence of the
2 fluorescent adenine derivative or analog base of "A_x" using fluorescence spectrometry.

1 14. The method of claim 2 further comprising detecting the presence of the
2 fluorescent adenine derivative or analog base of "A_x" using high pressure liquid
3 chromatography.

1 15. The method of claim 6 further comprising detecting the presence of the
2 fluorescent adenine derivative or analog base of "A_x" using fluorescence spectrometry.

1 16. A reagent for detecting the presence of ribosome inhibiting proteins, said
2 reagent comprising an oligonucleotide substrate including a GA_xGA tetraloop wherein "A_x"
3 is a nucleoside comprising a fluorescent adenine derivative or analog base capable of
4 emitting a fluorescence when released from said tetraloop.

1 17. The reagent of claim 16 wherein the nucleoside, "A_x", comprises a 2'-
2 deoxyribose sugar.

1 18. The reagent of claim 16 wherein the nucleoside, "A_x", comprises a D-ribose
2 sugar.

1 19. The reagent of claim 16 wherein the fluorescent adenine derivative or analog
2 base of the nucleoside "A_x" is 2-aminopurine.

1 20. The reagent of claim 16 wherein the oligonucleotide substrate comprises 2'-
2 O-methylated nucleosides.

1 21. The reagent of claim 20 wherein the oligonucleotide substrate is a dAU6
2 20mer attached to a solid support.

1 22. The reagent of claim 20 wherein the oligonucleotide substrate is a dA 14mer.

1 23. The reagent of claim 20 wherein the GA_xGA tetraloop comprises
2 deoxyribonucleosides.

1 24. The reagent of claim 20 wherein the "A_x" comprises a deoxyribonucleotide.

1 25. An assay kit for the qualitative and/or quantitative detection of a ribosome
2 inactivating protein, said assay kit comprising:
3 an effective amount of an oligonucleotide substrate having a GA_xGA tetraloop
4 wherein "A_x" is a nucleoside comprising an adenine base, derivative or analog thereof; and
5 a vessel for retaining a sample suspected of containing a ribosome
6 inactivating protein in contact with the substrate.

1 26. The assay kit of claim 25 further comprising an effective amount of a
2 fluorescent reagent compound capable of reacting with the adenine base, derivative or
3 analog thereof released from "A_x" to form a fluorescent adenine derivative or analog base.

1 27. The assay kit of claim 25 wherein the adenine base, derivative or analog
2 thereof is capable of emitting fluorescence when released from the nucleoside, "A_x".

1 28. The assay kit of claim 27 wherein the fluorescent adenine base, derivative or
2 analog thereof is 2-aminopurine.

1 29. The assay kit of claim 26 further comprising a fluorescence measuring
2 apparatus.

1 30. The assay kit of claim 27 further comprising a fluorescence measuring
2 apparatus.